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BY OLE KNUDSEN

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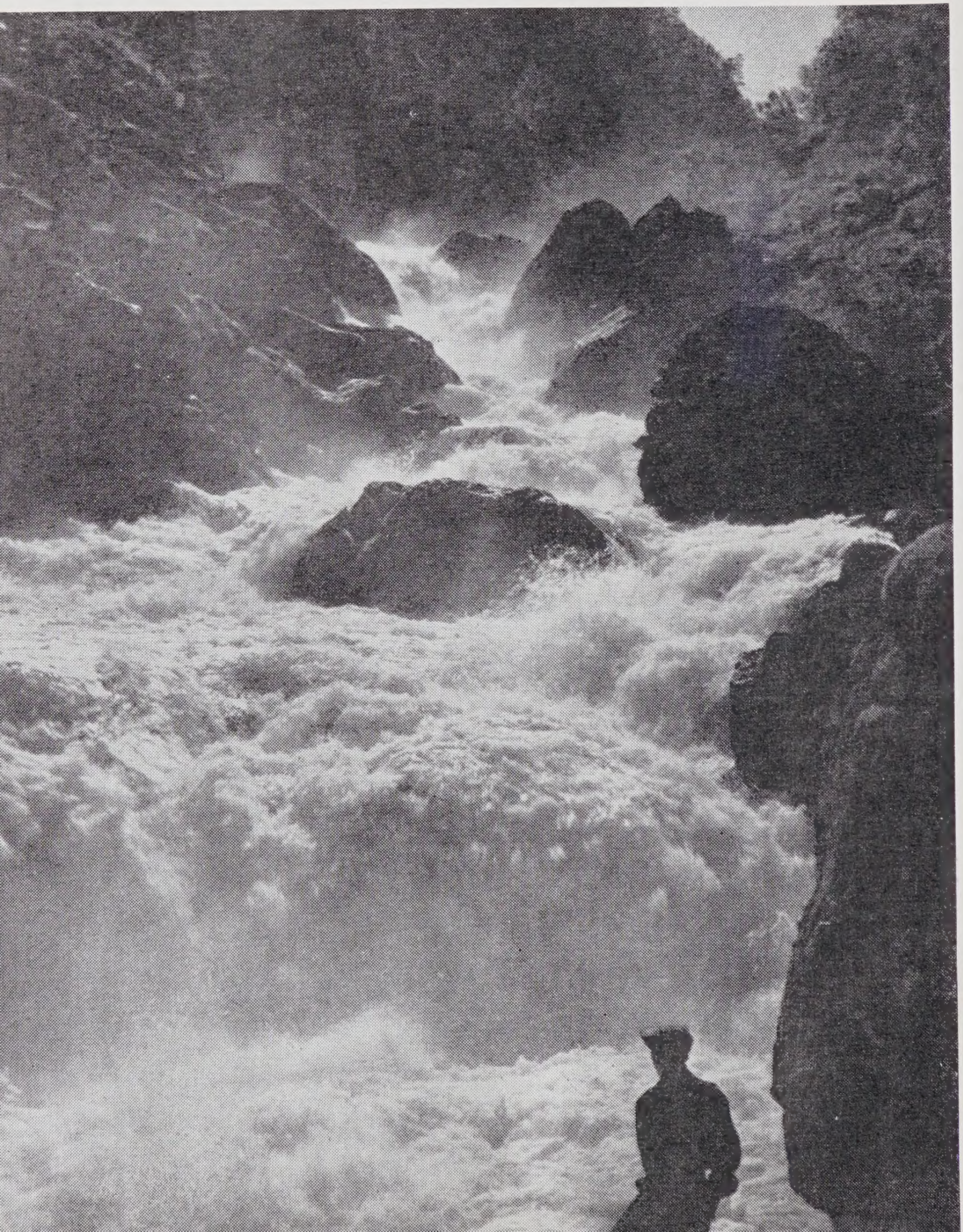

Fishing village.

PEOPLE

Norway is a northern country, a maritime country, a mountainous country. These are among the geographical features that determine the life and work of the people.

Norway constitutes the extreme north-west flank of Europe. Extending from 57 to 71 degrees north, a third of its length lies beyond the Arctic Circle. On the same parallels as Norway are parts of Greenland, Alaska, Siberia, yet Norway is not as cold as its northern situation suggests. The warm currents of the Gulf Stream raise the temperature considerably above the average for the latitude.

Poised at the edge of the Atlantic, Norway draws warmth from the ocean. Along the coast the climate is temperate, and rarely is a port blocked by ice even in the far north. Inland, conditions in winter are more severe. Mountain roads are blocked by snow and the lakes freeze. The summer is generally warm everywhere, with temperatures occasionally as high as anywhere in Western Europe. For farming, fishing, shipping, the favourable climate is an inestimable asset for a country so far north. It enables people to live and work even in the northernmost parts of Norway.

Norway is not an island, but geographically it is very much a maritime country. Constituting the western half of the Scandinavian peninsula, it has land frontiers to the east with Sweden, Finland, and the Soviet Union, but to the north, the west, and the south are the Arctic and Atlantic Oceans and the North Sea. In a straight line from Lindesnes in the south to North Cape in the farthest north, Norway is 1,000 miles long, but the coastline measures no less than 2,000 miles, even excluding inlets and islands. If the fjords and large islands are included, the coastline amounts to some 12,000 miles. The deep fjords that penetrate the mainland include some that are more than 100 miles long. More than 100,000 islands skirt the coast.

The sea brings fish to Norway's sheltered coastal waters to spawn. The sea has been Norway's larder ever since people settled there, and fishing ranks still among the principal occupations. The sea has also long been Norway's highway, the easiest, often the only, means of travel along the broken coast with its maze of islands and fjords. Norwegians are seafarers, and as such have built up a merchant fleet that ranks among the world's biggest.

Mountains cover the most of Norway. These highlands constitute a vast catchment area for rain and snow. The rivers running down from the mountains have for centuries been important for floating logs and for powering wheels for grinding grain and sawing timber. In the 20th century the waterfalls and rivers and lakes have become immensely more important as the source of power for hydro-electricity which is the basis for a large and growing industry.

Because so much of Norway is mountain, the amount of cultivated land is very small, only about 2.5 per cent of the total area. Yet no less than 20 per cent of Norwegians derive a livelihood from farming, coupled often with forestry. The forests, mostly coniferous and covering a quarter of the surface, are among Norway's principal natural resources. By processing into pulp, paper, rayon, chemicals, timber is becoming increasingly valuable.

The processing of raw materials has developed greatly in this century. More than half the herring catch, for instance, is now being transformed into oil and meal. Norway is rich in iron ore, and an increasing quantity is now being smelted into iron and converted to steel in Norway. The growth of the metal industry, now so important, is linked with this century's development of hydro-electric power. Cheap and plentiful power makes it feasible to import alumina and convert it into aluminium in Norway for subsequent export. It has even made it possible to exploit the nitrogen in the atmosphere as the basis for a large chemical fertiliser industry.

The geographical situation of Norway, with its long seaboard and its many excellent ice-free harbours, has no doubt encouraged the development of a large overseas trade. Such trade is essential for the maintenance of the standard of living that Norway enjoys today. For the country is far from self-sufficient with regard to many important industrial raw materials, foodstuffs, and manufactured articles. Partly this lack of self-sufficiency is determined by geography, by climate, which precludes the cultivation of certain crops. Partly it is due to the small population, the small home market, which makes the manufacture of certain products uneconomic.

Very large imports are required, and indeed, in relation to population, Norway's imports are among the largest in the world. The cost of imports is met primarily by the export of fish, forestry, mining and metallurgical products and a variety of lesser items, and, not least, by the large foreign freight earnings of the merchant fleet.

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With an area of altogether 124,000 square miles, Norway is larger than the whole of the British Isles, but the population is only 3.5 million. There is a concentration of population in certain towns and districts – Oslo and South-East Norway for instance – with most people living close to the coast, but many live remotely and separately, and this creates a number of special problems, social as well as economic. The sparsity of population – the average density is under 30 persons per square mile as against ten times that density in Denmark, 20 times in Britain, 30 times in Belgium – makes it often difficult and costly to provide the social services and amenities which people today expect.

The builders of roads and railways, for instance, are faced not only with the formidable problems of Norway's broken and mountainous terrain, but also with the economic difficulties presented by the low utilisation rate which a small population makes unavoidable. The provision of doctors and hospitals, broadcasting services, electricity supply, are other examples of amenities which in a country with a small population scattered over a great area are exceptionally difficult and costly to provide.

Nevertheless, in spite of the obstacles of geography and population, Norway is a country where community utilities are very extensively developed. Cooperation is here very often the key. The provision of electricity to isolated homesteads is assisted financially by a nation-wide tax on electricity consumption, whilst, in the case of the railways, the deficit on the North Norway line which extends beyond the Arctic Circle through large but thinly populated tracts is balanced to some extent by the surplus on lines in the more thickly populated areas such as Østfold in the South-East. Cooperation is – and must be – practised in many fields, and even such individualists as farmers and fishermen have learnt in recent years to stand together in cooperative purchasing and marketing arrangements.

Although Norway's small population tends to restrict the range of manufacture, rational production of a great many items has been achieved. By creating export markets abroad, the limitations of the small home market have been overcome to some extent. And the world is always ready to deliver in return the many items which for various reasons Norway still does not produce itself. International trade is also a form of cooperation in which Norway has engaged itself heavily.

On the whole it does not seem that a small nation as such is necessarily at a disadvantage economically in the modern world. When a small population is spread over a large area, as in Norway, special difficulties do arise, but Norwegian experience suggests that these too can be overcome.

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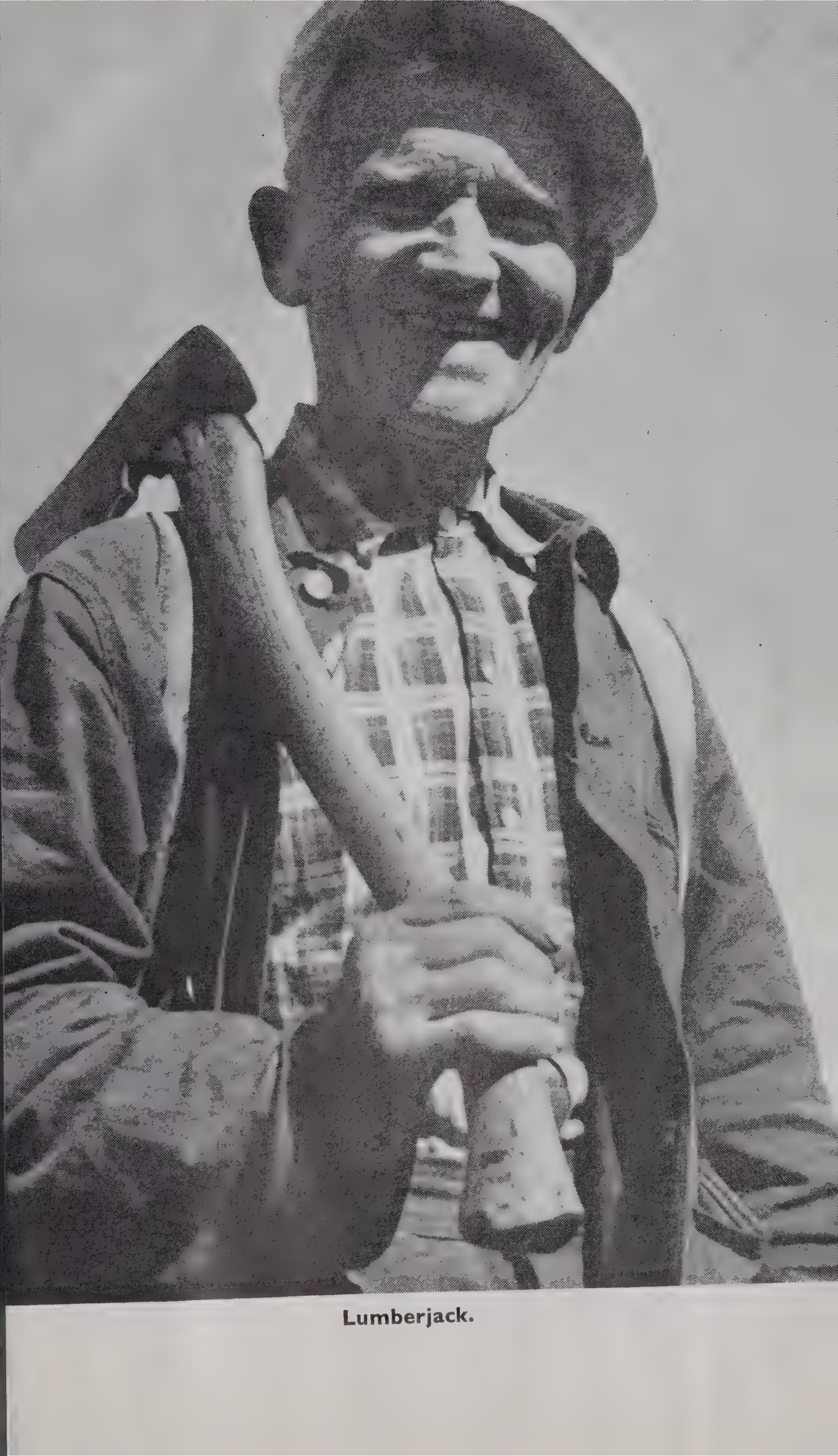
Although Norway's population is small, it has grown considerably during the last two centuries. In 1960 the estimated population was 3.6 million. A hundred years ago it was 1.5 million, and 200 years ago 700,000. Thus there has been more than a doubling of population each century, and this in spite of the fact that hundreds of thousands of Norwegians



Lumberjack.

emigrated during the course of the 19th century. Lack of economic opportunity at home was the principal spur to emigration then. In the 20th century, and particularly with full employment since 1945, emigration has been reduced to a trickle.

In terms of available labour, the present population is quite favourably constituted, with the working age group – 15 to 69 – representing two-thirds of the total population. The number of children (up to 14) is almost four times as great as the number of old persons (70 and over). On the other hand, the porportion of old persons is increasing. In 1959 the death rate per 1,000 inhabitants was only 9.0 compared with 14.5 half a century ago. With improving medical services and conditions generally this trend is bound to continue. In 1950, persons of 70 and over constituted 6.3 per cent of the population. In 1960 it is estimated that they will constitute 7 per cent, in 1970 8.6 per cent.

The birth rate is tending to fall – it is 18 per 1,000 inhabitants now compared with 28 per 1,000 at the beginning of the century – but it is higher than in the 1930's when the rate of births was only 15 per 1,000, and the net population increase exceeds 30,000 a year.

The occupational distribution of the population is evolving according to new and changing economic needs. The proportion of population deriving a livelihood from the traditional pursuits, farming, forestry, fishing, is declining. In 1920, 33 per cent had their livelihood from farming and forestry, in 1950, 22 per cent. For fishing the corresponding figures were 6 and 5.5 per cent. On the other hand, the share of population absorbed by industry went up from 29 per cent in 1920 to 34 per cent in 1950. Compared with 50 or 100 years ago the shift of employment is still more marked.

Norway, together with other countries, has suffered from the cyclical movements of international commerce, and there have been periods of economic depression and widespread unemployment. Since 1945, however, there has been a remarkably long period of full employment, and the number of people at work has never been so great as now. In June 1960 employed workers numbered over a million whilst the number of unemployed was only 5,500. Full employment as complete as this presents its own particular problems, but it is generally agreed that these problems are infinitely to be preferred to the problems of unemployment in the past. There is still a good deal of seasonal unemployment in winter – in January 1960 unemployed numbered 34,600, in December 1959 35,900 – but the spread of industry giving all-the-year-round employment should help to eliminate this.

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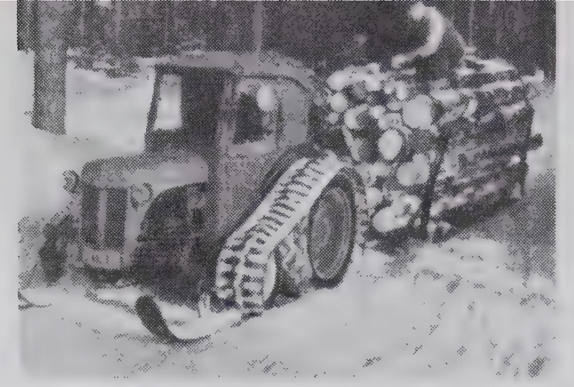
Production has increased even more than employment in recent years, and therefore the productivity of the individual worker has risen. This is attributable largely to the exceptionally heavy rate of investment which has been maintained since the war and which is now paying dividends in terms of a higher standard of living than ever before.

In natural resources Norway cannot be classed as one of the rich countries of the world. It possesses neither coal (except a little that is mined in remote Spitsbergen) nor oil nor great tracts of fertile farmland. On the whole the Norwegians have had to make a living the hard way. They fish the seas, they sail the oceans; they cultivate the little soil they possess, they fell trees, they harness the water power in the mountain lakes and falls, they build factories to use that power. In the course of time they have learnt to make the best, and most, of the available resources in their beautiful but not especially bountiful land.

It is an egalitarian society that has been built there. None can expect to grow rich, for taxes are heavy, but, equally, none is likely to suffer dire poverty, for there is work for practically all and social insurance benefits for the jobless, the sick, and the old. Compared with a century ago, even 50 years ago, there has been an utter transformation, economically and socially, and it is with a sense of achievement, and with confidence that further progress is possible, that Norwegians face the future.

II FARMING AND

A relatively large farm.



FORESTRY

Forestry is being increasingly mechanised.

In Norway as in most countries, agriculture was long the main livelihood of the people, together with hunting, fishing. As late as 1850, agriculture was the pursuit of 70 per cent of the population. Since then, industrialisation, trade, transport have grown mightily, and the proportion of population deriving a livelihood from agriculture has declined continuously, and in 1959 was down to about 20 per cent. Nevertheless, agriculture's role in the present national economy is important. The agricultural population enjoy relatively good conditions, though hours of work are longer on the whole than in industry.

According to the agricultural census of 1949, holdings over 2 hectares (5 acres) numbered about 144,000. The great majority of these were freeholdings owned and worked by the resident farmer and his family. The number of regular, hired agricultural workers is very small and growing smaller as more and more of this labour goes over to industry.

The amount of land that can be cultivated in Norway is relatively little. The area actually cultivated is about 800,000 hectares or 2.67 per cent of the total surface of the country. Per inhabitant this works out at only 0.24 hectares each. Because of the great number of holdings (in addition to the 144,000 over 2 hectares, there are many smallholdings from 0.5 to 2 hectares), the size of each is bound to be small on average. But it is important to note in this connection that Norway's productive forests total about 7.5 million hectares of which about 3.6 million — almost half — belong to farms. The yield of the forests helps importantly to augment the income of many farmers. Fishing and handicrafts are also valuable supplements to income for many smallholders.

Despite the fact that the supply of land suitable for cultivation is very limited, and despite the continuous loss of manpower, the total agricultural yield is relatively large and constantly increasing. Since the war, mechanisation in agriculture has been intense and seems to have more than made good the loss of labour. In 1939 tractors numbered about 4,000, in 1959 about 52,000. The first combined harvester reached Norway after the war, and by 1959 about 4,000 were in use, and in proportion to the amount of land under grain no country in Europe now has so many combined harvesters as Norway. The large number of small farms is a serious obstacle to economic and rational utilisation of modern machines and equipment, but to overcome this difficulty some 2,700 machine centres have been established, partly with State aid.

Research, training, improved cultivation methods are also factors that have helped to raise production. Significant in this connection is the big increase in the use of artificial fertilisers. In 1938 nitrogen consumption was 9,000 tons, in 1959 47,000 tons. In the same period the consumption of potash has increased from 13,000 to 43,000 tons, of phosphate from 7,000 to 19,000 tons. By 1959 the sonsumption of artificial fertilisers exceeded 110,000 tons altogether. Much of the great progress recorded by agriculture is the fruit of work done by the agricultural schools and research stations all over Norway and by the Agricultural College of Norway at Ås.

Norway is practically self-sufficient with regard to livestock products, and surplus production of certain items such as butter, cheese, and eggs is exported. Of grain for bread, production covers only a small proportion of requirements — about 7 per cent — whilst production of grain for fodder covers about 50 per cent of needs. Of the usual vegetables Norway is practically self-sufficient for most of the year, and despite the country's geographical situation most of the consumption of apples and pears is met by Norway's own orchards.

The sale of the principal agricultural produce is organised on a cooperative basis. The marketing of milk and milk products is best organised. In 1958/59 the number of commercial producers of milk and butter was altogether about 155,000, and no fewer than about 152,500 – 98.4 per cent – belonged to the cooperative dairy organisation which had 98 per cent of the wholesale trade. Membership of the cooperative organisations for meat, eggs, fruit and vegetables is less, but still considerable.

A large modern dairy.

A survey of land utilisation for various agricultural uses in 1958 shows that grass is far the most important crop. Of a total arable land of about 8400,000 hectars (2 million acres), no less than 510,000 hectars consist of meadow and pasture, while 200,000 hectars garow grain, 55,000 potatoes, and about 20,000 other crops. As the pasture season for cattle lasts no longer than about 4 months in most of the country, most of the grass area comprises meadow for hay.

Livestock in 1958 numbered about 1.1 million cattle, 420,000 pigs, 130,000 horses (a reduction of 70,000 from 1949 to 1958), 1.8 million sheep, 110,000 goats, and 3.5 millon hens. Livestock is by far the most important source of income in Norwegian agriculture, and the most valuable of animal products are milk and milk derivatives. In milk production, progress has been remarkable. In 1938 milkers numbered about 830,000 and total milk production was 1.4 million tons. In 1958 milkers numbered about 620,000 and production was 1.63 million tons. In other words, milkers have been reduced in number by about 25 per cent from 1938 to 1958 while milk output in the same period has gone up by about 15 per cent. Despite a high consumption of milk by the Norwegian public – about 500 lbs. per person per year – there is a surplus of butter and cheese which is being exported. Marketing possibilities for this surplus are not always satisfactory, and therefore the authorities have encouraged a greater concentration on grain production on bigger farms, and in recent years there is a clear trend in the direction of increased grain production.

However, although some of the larger farms have gone over to more specialised grain growing, it is diversified farming which is typical of Norwegian agriculture as a whole. Most of the production of crops is used for animal feed, and in fact about 80 pen cent of total agricultural income in 1958 derived from the sale of animal produce and only 20 per cent from the direct sale of crops.

Norway has a considerable export of animal pelts. Fur breeding is often conducted in close association with agriculture and for many small farms it constitutes a valuable income. Before the second world war silver fox, blue fox, and platina were most important, but change of fashion has now made mink the biggest-earning variety.

A special category of livestock is reindeer, found now only in the northernmost part of Norway and in certain mountain districts further south. Some reindeer owners have 1,000 animals or more. Income derives principally from the sale of reindeer meat and hides.

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For many Norwegian farmers, the forests are an important source of income. Productive forest land covers about a quarter of the surface of Norway, and most of this is privately owned, principally by the farmers. With only about 5 per cent of Norway consisting of arable and grazing land, it is clear that the forests must contribute an important share to rural earnings as a whole.

The amount of productive forest land in Norway is estimated at about 7.0 million hectares (17.3 million acres), but only about 2/3 of this area is considered exploitable at present. Some 70 per cent consists of coniferous trees, mostly spruce and pine. Commercially, these are the most important species. Spruce particularly is the raw material for the manufacture of pulp for paper. Of deciduous trees, birch is the most abundant, but oak and other species are also found.

Wood is perhaps the most versatile of raw materials. For thousands of years it has provided fuel as well as material for homes and boats and furniture. During the last century it has been the basis for a rapidly growing pulp and paper industry. In the last war, cellulose pulp was fed to cattle in Norway and so, indirectly, helped to feed the nation. Since the war, pulp has been transformed to rayon fibre and yarn on an increasing scale, and an important chemical industry has also developed in Norway through the exploitation of ethyl alcohol distilled from waste pulp liquor.

The forests therefore are immensely valuable for the national economy as a whole. The scope and growth of the forests are fairly rigidly defined by physical conditions, so that it is not possible to increase production very rapidly in terms of volume. But in terms of value there has been very spectacular progress owing to the ever-increasing degree of processing. A log that is processed and sold in the form of pulp, paper, rayon or chemicals obviously yields a far greater income than if simply sawn and sold as lumber.

The annual cut is about 11 million cubic metres (388 million cubic feet). A rather large proportion is still retained locally for use as fire-wood, for fencing, building, and so on, and the amount available for industrial purpose is about 8 million cubic metres. Of this, rather more than half goes to the pulp mills.

Timber in tow.

The sawing and planing of timber were long a major Norwegian industry, and it is still important, with sawmills numbering several thousand. Formerly there was a large export of sawn and planed timber, but this is now quite small, partly because of the growing demand for timber in Norway for housing and other purposes, partly because of the ever-growing consumption of wood by the pulp mills.

It seems most likely that the demand for wood and wood products will go on increasing, and Norway is devoting much effort therefore to increasing the supply. A big afforestation programme is in progress, not only in the traditional forest areas of East Norway, but also in West and North Norway wherever conditions are favourable. Since the war annual plantings have broken all records, and in 1957 reached the best ever figure of just under 100 million saplings.

It is officially estimated that in the last 25 years the annual increment in Norwegian forest — that is, the yearly growth of timber — has increased from 10.4 to 13.1 million cubic metres. It is estimated too that by further afforestation and improved cultivation the annual increment can be raised to about 25 million cubic metres (883 million cubic feet).

Of course, this is a long-term target. More immediately significant as a means of increasing supply is the fact that new processes and applications are making it possible to exploit commercially varieties of timber wich formerly were valueless — small dimension logs, for instance, which should in any case be felled as part of the thinning of stands which is necessary for good silviculture. It is also helpful from the point of view of commercial supply that the amount of wood consumed as fuel is tending to decline.

The State and the local authorities own about 25 per cent of the forest area. The remainder is owned privately, mostly by the farmers. Therefore the improvement and expansion of the forest are very much a matter of individual initiative, but the State does play an important role, firstly through the grants which it makes towards the cost of afforestation, and secondly through its nation-wide system of inspectors and advisers. A forest protection law gives the State through local boards at parish and county level considerable powers of intervention in cases of forest mismanagement. A number of forestry schools and two forestry research institutes are in operation.

In recent years there has been a considerable mechanisation of forestry. Power saws – chiefly of a Norwegian design which also are being exported in considerable quantity – are increasingly being used to speed and ease the work of felling and lopping, and more and more tractors, winches and other gear are being used to shift the logs and haul them to the rivers for floating to the sawmills and pulp mills. More forest roads are being built, and this together with the mechanisation of transport is helping to open up forests which formerly were not exploitable owing to difficult access. As far as the development of new plantations is concerned, an important feature is the large-scale draining of bogland. Another, more fortuitous factor which has tended to make new land available for afforestation is the small but significant rise in temperature which has been noted during the last half century. The altitude limit for trees has been raised, thus opening up the possibility of afforesting mountain slopes which formerly were too cold.

Conditions for forestry workers have been greatly improved since the war, both in terms of wages and working and living conditions. Consequently the labour supply has been reasonably good in spite of the scarcity of labour generally in full-employment Norway. Logging is traditionally a seasonal occupation – most of the timber is cut in winter when it can be hauled across snow to the rivers for floating in the spring – but efforts are being applied to making it an all-the-year-round occupation in order to stabilise employment. The increased amount of planting and general care and cultivation of the forest means that employment can – more than in the past – be offered in summer as well as winter.

The recent encouraging progress in the forestry industry is, of course, linked to the good demand which forest products have enjoyed since the second world war. It is considered a task of national importance to increase and improve the forests, for wood in various forms constitutes one of Norway's principal exports.

III FISHING AND

From the deck of a floating whale factory in the Antarctic.

Most of the fishing boats are small and operate close to shore.

WHALING

Since men first settled in Norway, they have fished the waters. They have not had far to go. Moved by instinct, the fish come to the warm and sheltered Norwegian waters to spawn. The fisheries are therefore for the most part coastal. In 1957, for instance, 1.6 million tons of fish were caught in coastal waters, and only 123,000 tons in more distant seas.

That the Norwegian fisheries are overwhelmingly coastal means much in terms of quality. The fish is fresh as probably no other in the world. Within hours it is landed and packed or processed. Deterioration has hardly a chance to start. Important too are the strict regulations which require that the fish be bled, gutted, and washed immediately it is caught.

Out of the sea the Norwegians take more fish than any other nation in Europe. Since the war, the catch has averaged some 1.4 million tons a year, with a record haul of just under 2 million tons in 1956 – enough to provide a very hearty meal for every single person on this earth. The Norwegians export far more fish than they consume themselves. In fact, fish and fish products rank among the three major exports and play an important role in the national economy as a whole.

No wonder that when the great herring fisheries start – usually in January – the whole nation watches the fortunes of the 20,000–30,000 fishermen who are engaged. The herring catch has exceeded 1 million tons in recent years, but always it is a gamble. The weather may make the sea a tempestuous no man's land, and there is always the possibility, once in a while, that the vast shoals of herring may fail to make their annual migration at the usual time to the usual place off the long Norwegian shore.

As far as man's ingenuity can provide, all has been done to make the fisheries proof against all vagaries. The boats are modern and the gear elaborate. A purse-seine – which may cost tens of thousands of kroner – is a fabulously capacious device that can trap a hundred tons of herring in a single cast.

Science gives the fishermen its backing. The migrations of the herring and cod are plotted like the movements of an invading army. Research vessels, equipped with a battery of detection instruments, are constantly on the prowl, ready to give the fishermen first news of the approaching shoals. Scientists and fishermen are close allies in the annual battle of the sea.

The fishermen's own boats are fitted with all modern devices. Echo sounders, radio and other devices are standard equipment on thousands of boats.

Because the major fisheries are seasonal, it is vital to make the fullest use of the limited time the fish stand close to shore. No techical or organisational aid is omitted wich can help to secure the fullest exploitation of the incoming shoals.

The herring fishermen have organised their operations like a military campaign. Headquarters ashore link the thousands of boats by wireless. The fleet can be directed and concentrated wherever the shoals stand thickest. Relief vessels can be summoned to carry the huge catches to port so that the catcher boats can carry on uninterrupted.

The fishermen have learned to cooperate. Like all Norwegians they are individualists, but in the face of the elements and the whims of the commercial market, they have organised themselves. Today they are more like a team than competitors, and together they constitute a powerful sector of the Norwegian community.

The great majority of fishermen in Norway are not wage-earners but sole or part owners of their own boats. They are their own masters – within the ambit of an over-all cooperation. This proprietorial system has been supported by the coastal character of most of the Norwegian fisheries. Fishing

Herring trapped in a purse-seine are loaded onboard.

close to shore, relatively small boats are required which, with the assistance of credit institutions, even the ordinary fisherman can afford to buy. At mid-1959 there were 28,700 open boats with motor and 12,700 decked motor or steam vessels.

The opposition which Norwegians generally have shown to trawlers is accounted for partly by the indiscriminate and deleterious catching methods involved in trawl fishing, but also by the fear that the introduction of large and expensive trawlers on a general scale would alter the whole status of the industry and create an employer-employee relationship along capitalistic lines.

By legislation the number of large trawlers has been limited to a handful, but the number of so-called small trawlers is now considerable, and generally there is a tendency for the size of fishing vessels to increase. Although the coastal fisheries are still by far the most important – the herring fisheries in the winter, the cod fisheries in the spring, and the brisling and mackerel fisheries in the summer – there is an increasing amount of deep-sea fishing, off Greenland and Iceland particularly, which requires larger boats.

The increasing deep-sea fishing is in turn linked with the trend towards more full-time fishing. In the past, Norwegians along the coast would combine farming and other pursuits with fishing whenever the seasonal shoals arrived. Now, however, fishing has become a more specialist occupation, and to ensure all the year round employment the fishermen are going farther afield in between the coastal fisheries.

There are now far fewer registered fishermen than there used to be – 80,500 at the beginning of 1959, of whom only 28,000 had fishing as their sole occupation – but their output is in fact much larger than before – about double the average yearly pre-war output. With fewer fishermen, production has increased spectacularly since the war. From 1946 to 1950 it averaged 1.1 million tons a year. From 1951 to 1955 it averaged 1.7 million tons. In 1956 output was a record at just under 2 million tons, but in 1959 production was down to 1,37 million tons.

It is particularly the herring catch which has increased, with a record haul of about 1.4 million tons in 1956. The cod catch, wish comes next in volume, amounted to 307,000 tons in 1956. The principal other fish are coalfish (saithe), haddock, and mackerel. Of crustaceans there is a good deal of crab, lobster, and shrimp.

The greater part of the herring catch is now converted into meal and oil at a number of factories along the coast. The meal is used for chicken and cattle feed and the oil is processed into margarine and other products. In view of the immense amount of herring caught in recent years it is clearly of great importance that factories exist which can take an almost unlimited quantity for processing into oil and meal. In this way a glut can be avoided and prices kept stable at a reasonable level.

A great deal of herring is, of course, still sold for direct human consumption, either fresh, salted, or frozen, mostly for export. The tiny herring called brisling and sild constitute the basis of Norway's large fish canning industry which is centred on Stavanger. Tinned fish is an important export.

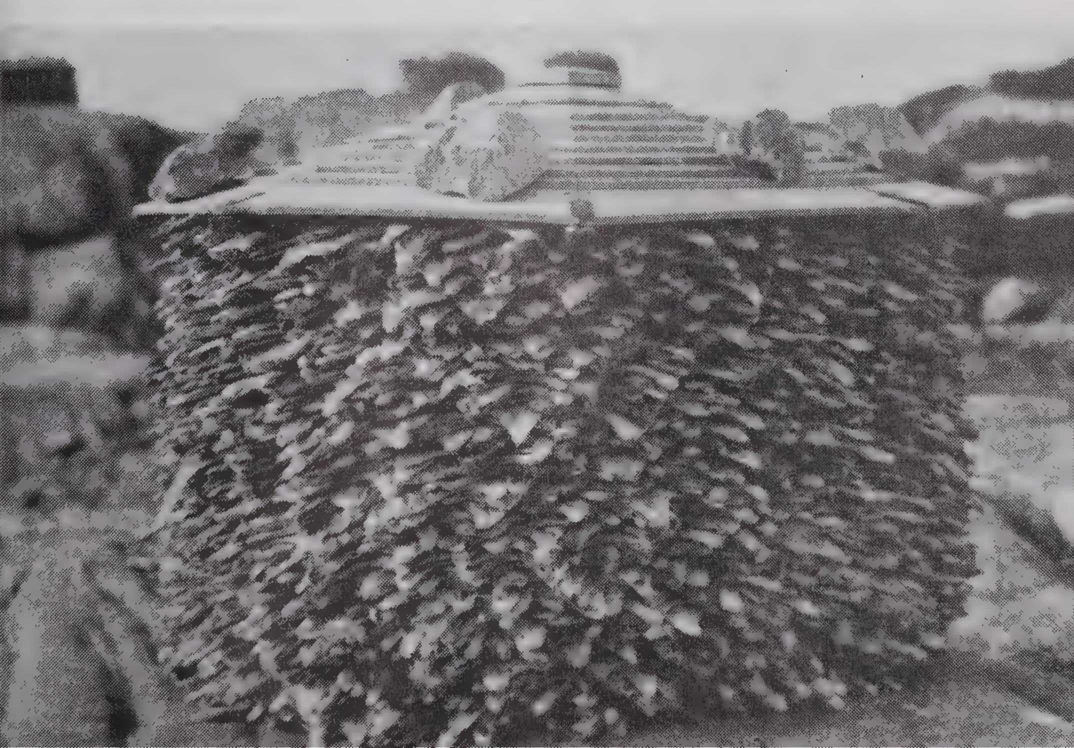
Most of the cod is salted or dried for conversion into klipfish and stockfish for which there is a very heavy demand abroad, particularly in the Mediterranean countries, West Africa, and South America. A considerable amount of cod is now also taken by cold storage plants for conversion into frozen fillets. These too are becoming a valuable export.

Today not much of the fish is wasted. Even the silvery scales of the herring are used to make a paste for artificial pearls.

Quite an important seasonal occupation is sealing, carried on chiefly off Newfoundland and in the waters around Jan Mayen. Some 60 to 70 Norwegian vessels are engaged, and the annual catch is about 300,000 seals. The pelts fetch a good price and there is also a yield of blubber – about 5,000 tons in an average season.

Very much more important from a national point of view is the whaling industry. There is a considerable catch of small whales off the Norwegian coast in the summer – between 3,000 and 4,000 whales a year – yielding a good deal of meat and blubber, but the industry is concentrated primarily in the Antarctic. For many years now, Norway has sent the largest number of expeditions to the Antarctic hunting grounds, and Norway has indeed pioneered the modern whaling industry.

Cod is dried for export to tropical markets.



It was the Norwegian Svend Foyn who after years of effort developed the shell harpoon and began to use it successfully almost a century ago. It is from that time that modern whaling can be said to have started. It was Norway too that started Antarctic whaling on a large scale in 1905 and, in 1925, introduced the first factory ship with hauling slipway – an invention wich made the whaling expeditions independent of shore stations.

Since 1953 the number of Norwegian floating factories in the Antarctic has been nine. In the 1958–9 season they were accompanied by 93 catcher boats. In addition Norway has operated one shore station, at Husvik Harbour on South Georgia. The Norwegian expeditions employ between 4,000 and 5,000 men, but in addition more than 2,000 Norwegians are employed on British and Argentine expeditions.

Norway's whale oil output in the Antarctic season is about 150,000 tons. Much is sold direct to foreign countries – the price in 1959 averaged 73 pounds sterling a ton – but about a third is brought to Norway for refining and hardening for use in margarine and for various industrial purposes. Also there is an output of some thousands of tons of by-products such as bone meal, liver, meat extract, and solubles.

Before the war, when the number of Antarctic whaling expeditions became excessive, Norway took the initiative in trying to secure effective agreements for reducing participation. During the war, whaling ceased, but in spite of this respite it is clear that the slaughter of whales has been too great and that the stock of blue whales particularly has diminished seriously. In the 1938–9 season 13,849 blue whales were caught – 41.6 per cent of the total blue and fin whale catch. But in 1958–9 1,191 blue whales were caught – 4.4 per cent of the total.

An international agreement signed in 1946 restricts the total annual catch of whales, and Norway has taken the initiative here in securing reductions of the permitted quota in order to try to restore, or at least maintain, the stock of whales. In 1956–7 and 1957–8 the quota was the lowest ever – 14,500 blue whale units, but in 1958–9 it was raised to 15,000 units.

With the total catch fixed by agreement, whaling has become extremely intensive, with more and bigger expeditions taking part, employing faster and more powerful catcher boats. The catching season has consequently become very short. In order to establish whaling operations on a more rational basis, Norway has tried, and with some success, to secure an agreement for a voluntary reduction in the number of boats attached to each participating expedition. In 1958–9 the average number of boats per expedition was 11.8 for all 5 nations engaged in Antarctic pelagic whaling, compared with 14.4 in 1952–3. Norwegian expeditions in 1958–9 operated with only 10.3 boats on average.

IV POWER AND

At Rjukan, an important centre for chemical manufacture.

Man made fibre spun at Sarpsborg from wood pulp.

INDUSTRY

For a number of years now, industry has been the biggest employer of labour in Norway. In 1959 it was estimated that industry, including mining and power generation, employd 26 per cent of the working population, compared with 20 per cent for agriculture and forestry, 5 per cent for shipping, and 4 per cent for fishing and whaling. The contribution of industry to production is also the biggest of any sector of the national economy.

Norwegian industry has traditions going back a long way, but it is in the 20th century that industrial progress has been greatest, following the harnessing of water power for electricity. Long before the age of electricity, Norwegians used water power to drive mills for grinding grain and sawing timber. The total amount of power raised in this way was considerable – the ancient water wheel was no unimportant precursor of the modern turbine – but not until the advent of hydro-electricity did Norway secure a form of industrial energy that could compare with coal and oil.

In Norway itself there is neither coal nor oil. There are deposits of coal in Spitsbergen, but the Svalbard archipelago did not become a Norwegian possession until 1920, and even today output there is small.

The industrial revolution which started in Britain and spread across Europe and North America in the 18th and 19th centuries was based on coal for steam and coke for iron. With timber from its own forests, Norway had built fine sailing ships. With ore and charcoal of its own, Norway had produced iron of high quality. The sailing ships were ousted by the steam ships, the charcoal furnaces by the Bessemer coke furnaces.

Not until the beginning of the present century could Norway start developing a considerable industry based on its own native source of power – water. The first electricity works had been established in 1887 in Skien in South Norway, and the first municipal works opened in 1891, providing light for Europe's northernmost town – Hammerfest. But those were oil-driven plants. It is electricity generated from the water in Norway's lakes, falls, and rivers that has provided the cheap and plentiful power which has revolutionised the Norwegian economy in the last half century.

The Norwegian mountains are a vast catchment area for rain and snow. Lakes cover 5 per cent of the country's entire surface and store immense quantities of water for all the year round power generation. Norway has more water power than any other country in Europe, and today it ranks equally with the fish in the sea, the timber in the forest, and the ores and minerals in the ground as among the country's principal natural resources.

Norway is now, in proportion to population, the most hydroelectrified nation on earth, with an installed generating capacity in 1958 about 5.6 million kilowatts. Output the same year was over 27,000 million kilowatt hours. Yet the reserves of water power still unexploited are large. It is estimated that it is economically feasible to generate up to 120,000 million kilowatt hours a year with a total installed capacity of some 20 million kilowatts. So far, therefore, not more than a quarter of Norway's water power has been harnessed.

With the power already harnessed, Norway has built up a large industry. Norwegian hydro-electricity is the cheapest in the world, and compares very favourably with coal and oil in price. Especially for branches of production requiring the application of large quantities of power this is an important competitive factor.

Power development is being pushed ahead at high speed. In 1955, the best year so far, no less than 567 000 kilowatts of new generating capacity were completed. In the period 1953–

57 new generating capacity was installed at almost twice the 1948–52 rate and at almost 10 times the 1935–39 rate. During the period 1958–61 new installations are planned to average 400,000 kilowatts year, and by 1961 annual output should be 34,000 kilowatt hours a year.

Water is dammed to yield cheap and plentiful power.

In Norway's total investment programme, hydro-electric plant construction is one of the biggest items. Construction of power plants is very costly in labour and materials, but in the long run it is an investment that pays an exceptionally high dividend. Once built, a hydro-electric plant requires only a very small staff, and the source of energy – unlike a coal mine or oil well -- is never exhausted. It is perhaps the nearest approach in practice to the ancient dream of perpetual motion.

The power plants now being built in Norway are particularly durable. All the major stations are built deep inside mountains where they are safe even from hydrogen bombs. The water flows often through miles of tunnels blasted out of the rock, from remote lakes to turbines in machine halls deep inside the mountain. In this type of mountain construction work, Norwegians have acquired special skill and experience, and contracts for similar power projects abroad have been secured by Norwegian engineers.

Although the output of electricity now is considerably more than double the pre-war figure and consumption is the highest per head of population in the world, the demand for electricity for domestic as well as for industrial use is far from satisfied. With the growing cost of other forms of fuel, it is economic to use electricity for domestic heating as well as for lighting and cooking. Because of the demands of industrial

This and many other hydro-electric power stations are built inside mountains.

production, domestic heating by electricity is not being encouraged at present, but in the long run it might advantage the national economy by cutting the import of coal and oil and reducing the consumption of firewood which could be more profitably used by the pulp and other timber-processing industries.

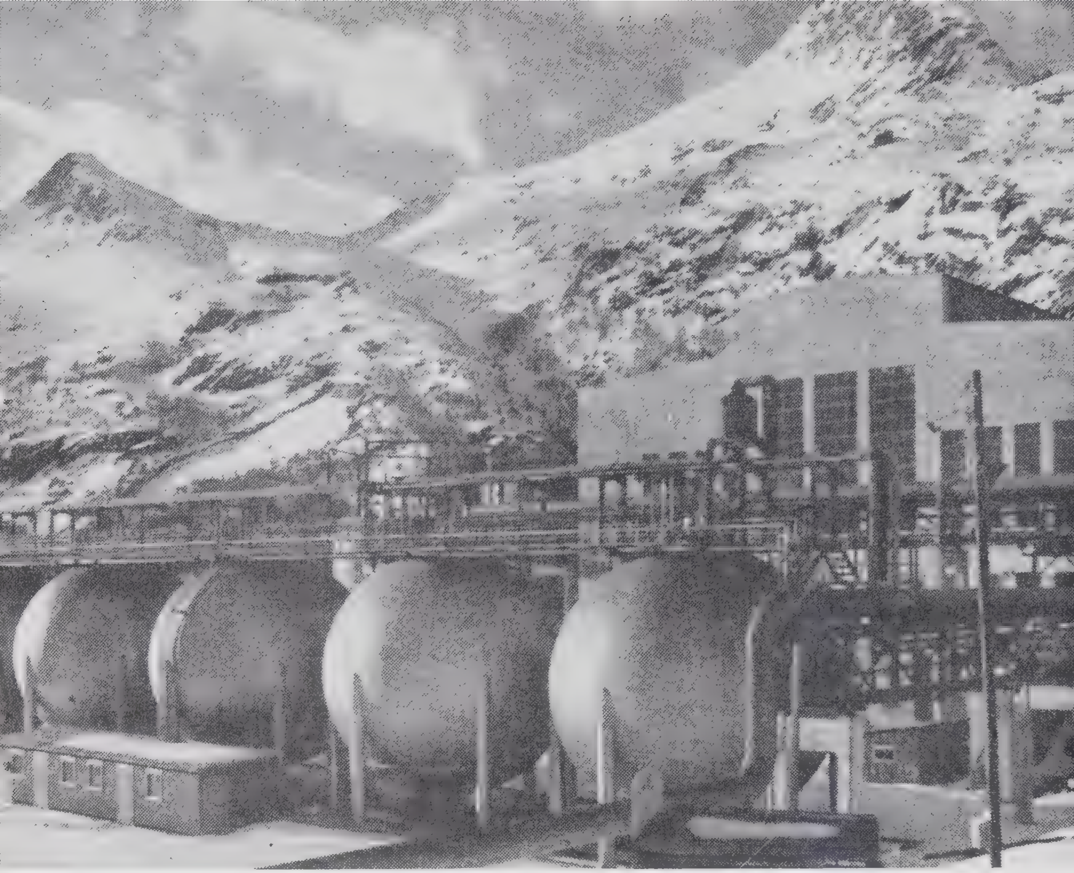
In recent years, coal and coke imports have been considerably under half the pre-war figure, but oil consumption has increased some 600 per cent. In 1958 work was started on the construction of an oil refinery on the east bank of the Oslo Fjord to handle 2 million tons of crude oil a year. It will be the biggest in Scandinavia and will considerably cut the import bill for oil. Norway is also studying the industrial possibilities of atomic power. The first experimental reactor was built in 1951, and in 1959 the first power-demonstration reactor for generating steam was completed at Halden. This reactor too will serve primarily experimental purposes, but the steam it raises may be piped to a nearby pulp mill. The Halden reactor is also expected to provide useful data with regard to atomic propulsion units for ships. However, although Norway is actively investigating atomic power problems and possibilities, it is not thought that it can compete in price with hydro-electric power for many years yet.

It is national policy to supply the entire population with electricity. Despite the great distances, the difficult terrain, and the sparsity of habitation over much of the country, 98,5 per cent of the population were supplied with electricity in 1958 compared with 80 per cent in 1945. The work of linking the remotest hamlet and cottage to the electricity grid is subsidised by a national levy on power consumption. In terms of improving the condition of life of the people, particularly of housewives in the countryside, the value of this power distribution programme can scarcely be exaggerated.

Railway electrification is proceeding. Electric lines now handle over half the total traffic. Important savings in running costs are being achieved so that the cost of conversion is recouped quickly. On tracks where traffic is too small to justify electrification, steam locomotion is giving way to diesel.

The state, the local authorities, and industry are all builders of power plants in Norway, but the tendency is for the proportion of publicly owned plants to increase – state and municipal plants constituted 67 per cent of total generating capacity in 1957 as against 46 per cent in 1945. Whilst there is diversity of ownership, there is also cooperation, coordination, and standardisation. The current system – 3-phase, alternating, 50 cycles a second – is uniform throughout practically the whole country. To mutual advantage, regional grid systems have been developed which probably will be extended to embrace the entire south of Norway in order to ensure the fullest possible exploitation of the available water power.

The export of power has been discussed but not realised – except for one relatively small scheme for supplying electricity to Stockholm from a plant in the Trondheim district. Of the waterpower so far harnessed, Norway needs all – and more – itself. With regard to the water power not yet harnessed, Norway is reluctant to peg it out to foreign exploiters, for it is possibly the nation's chief competitive asset in the sphere of industrial production. Norway's water power is jealously guarded, and its exploitation even by Norwegians is governed by strict regulations. One important stipulation is that power plants built by others than the local authorities



Ammonia plant at Glomfjord north of the Arctic Circle.

become the property of the state after a certain term of years usually 50 or 60, and without compensation.

Although the proportion of electricity consumed by homes railways, farms, shops and offices is increasing – amounting now to about 37 per cent of total consumption – industry is still the biggest user of electricity. And about two thirds of consumption in this sector is by the electro-chemical and electro-metallurgical industries. These are industries which have specifically developed as the result of the availability of cheap and plentiful hydro-electric power.

In 1889 Norway began the production of calcium carbide Although this was the start of Norway's electro-chemical industry, and carbide has subsequently been the base for the production of cyanamide and dicyandiamide as well, it was the production of nitrogen, and nitrogenous fertilisers, from 1905 onwards, that established the chemical industry as a major factor in the national economy. Production was based on the extraction of nitrogen from the air by the electric arc process evolved by the two Norwegians Birkeland and Eyde. It was a process demanding a very heavy consumption of electricity, and it was Norway's exceptionally cheap electricity that made the process economically feasible.

On the basis of the Birkeland-Eyde process, Norway built up what quickly became one of the nation's biggest industrial concerns – Norsk Hydro – which now has an output of more than a million tons a year of various nitrogenous fertilisers for both home and foreign consumption. In the terms of pure nitrogen, output has gone up from 84,000 tons in 1938 to 247,000 tons in 1959. Norsk Hydro established its first factory – the first in the world for the production of fertilisers from the atmosphere – at Notodden in South Norway. Now it has factories at a number of places including Glomfjord north of the Arctic Circle. The Birkeland-Eyde process was replaced by the Haber-Bosch ammonia synthesis method 30 years ago, and from Glomfjord liquid ammonia is shipped in bulk for conversion to nitrogenous fertilisers at the South Norway plants. Nitrate of lime is the principal marketed product, but there are some 40 other items including magnesium from sea water, PVC for plastics, heavy water for atomic reactors, and argon for welding.

The greater part of Norway's electro-chemical production is exported.

In the electro-metallurgical field Norway has developed a considerable production of aluminium, amounting in 1959 to 145,000 tons, most of which is exported. The consumption of electricity in the production of aluminium is exceptionally heavy – 20,000 kilowatt hours a ton (for pig iron the corresponding figure is 2,400 kilowatt hours) – and here again cheap power is an important production cost factor. Norway can produce aluminium and sell it competitively abroad even though the raw material – the alumina – has to be imported from distant places. It is also important in this connection that there are many exellent natural ice-free harbours at points along the coast where the factories are sited.

Norway has developed a large production and export of ferro-alloys — ferro-manganese, silicon-manganese, ferro-silicon, ferro-chrome — even though the raw materials such as chrome and manganese nearly all have to be imported. Output of 45 per cent ferro-silicon in 1959 was 114,000 tons compared with 42,000 tons in 1938. Output of other ferro-alloys was 161,000 tons compared with 93,000 tons in 1938.

Production capacity in the electro-metallurgical field is being considerably extended. In the aluminium sector, for instance, where production was 145,000 tons in 1959 compared with 29,000 tons in 1938, plans are in hand for raising annual capacity to 225,000 tons by 1963. Production capasity for ferro-silicon is expected to exceed 200,000 tons by 1961.

Of certain ores, Norway has considerable deposits, and there is a mining industry of importance. A part of output of iron ore and pyrites is being processed in Norway by electric smelting. Norway's first electric pig iron furnace dates from 1910, but it was not until two Norwegian engineers developed the Tysland-Hole electro-furnace in the early 1920's that electric smelting became important industrially. Furnaces of the Tysland-Hole design are supplied by the Norwegian engineering

Iron and steel plant at Mo i Rana, North Norway.

concern Elektrokemisk to many countries the world over for smelting a variety of metals. The Söderberg continuous baking electrodes also developed and marketed internationally by Elektrokemisk are another important Norwegian contribution to electric smelting processes.

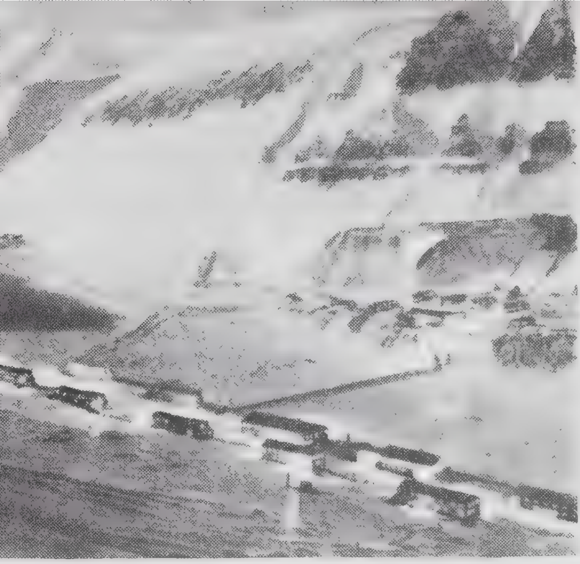
In Norway, Tysland-Hole furnaces of 18,000 kilowatts – the biggest in the world – have been installed at the new iron and steel plant at Mo i Rana. Sited just a few miles south of the Arctic Circle, this is Norway's first large integrated steel plant, converting native ore into a range of rolled steel products. Present capacity is about 330,000 tons of pig iron, over 300,000 tons of steel yearly. Output of steel is expected to reach 450,000 tons at the end of 1961.

There are a few smaller producers of iron and steel too, and altogether Norway's output of pig iron in 1959 was 336,000 tons as against only 38,000 tons in 1938 and 416,000 tons of steel as against 68,000 tons in 1938. Despite the considerable expansion in this sector, Norway had to import iron and steel in 1959 to the extent of 504,000 tons.

Although Norway is now processing more of its iron ore itself, most of output – 1.7 million tons of iron and ilmenite ore in 1959 – is still exported as such. The principal iron ore mines are at South Varanger in the far north near the Russian border. Likely to be important in the future are the large Dunderland iron ore deposits in North Rana near the Mo i Rana steel plant. Trial production and processing of the Dunderland ore has been started.

Ilmenite (titanium ore) has become an important product of Norway's mining industry in this century, and large new deposits recently discovered are now being developed and are expected to yield some 300,000 tons yearly from 1961. There is also a small production of the rare molybdenum and columbium ores. These, as well as titanium, are important in association with steel for producing metals of exceptional hardness.

Next to iron ore, pyrites rank biggest among Norway's mining products. Output – 732,000 tons in 1959 – has been tending to fall recently, but the biggest deposits have been kept in reserve and are now to be developed. Rather more than half of



Coal mining settlement at Longyear City in Spitsbergen.

output is exported, and the other half is processed in Norway to yield sulphur, copper, and other minerals. In 1959 Norway's output of sulphur was 78,000 tons. Production of copper was 19,000 tons. A small proportion of the 48,000 tons of zinc produced in 1959 also came from pyrites, but most was produced on the basis of imported zinc ore, refined in Norway by an electrolytic process and then re-exported. Norway's output of 26,000 tons of nickel is likewise based on the import of nickel matte and the export of the finished metal. It is the cheap hydro-electricity in Norway that makes this an economic proposition.

Minerals possessed by Norway include plentiful limestone for the cement, chemical, and other industries, dolomite, olivine sand which is being used instead of quartz sand in foundries because of its anti-silicosis effect, mica, graphite, and feldspar – used in Germany for making Meissen porcelain as long ago at the 18th century.

Norway is rich in such stone as labrador, marble, slate. Norway has long exported granite. It was used to build the Kiel Canal and the Devonport, Chatham, and Dover docks.

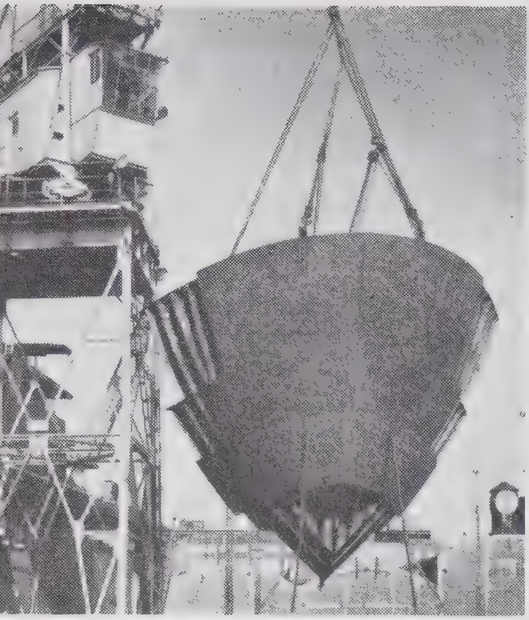
Norwegian coal output in Spitsbergen was 273,000 tons in 1959 (299,000 tons in 1938), but imports of coal and coke in 1959 were 877,000 tons. The Spitsbergen coal has high calorific value, but its application is limited owing to its small size. There is some export. Consideration is being given to the establishment of a coking plant in North Norway where Spitsbergen coal can be converted to serve a greater range of uses.

A raw material undergoing an increasing degree of processing is timber. Timber is among the oldest of Norway's exports – there are records extant of shipments more than 600 years ago – but the form of that export has altered. Now very little timber is shipped as logs and sawn and planed boards. The great bulk goes abroad as pulp and paper which yield a substantially larger income.

Production of mechanical wood pulp in 1959 was 705,000 tons (calculated dry), sulphite and sulphate chemical pulp 678,000 tons (calculated dry), paper and cardboard 720,000 tons, and wallboard 108,000 tons. The supply of raw material is limited (although in the long run it will be increased by the big afforestation programme now being undertaken), but by more and more processing the economic worth of the logs cut is being steadily enhanced. An important development recently has been the start of production of chemicals and textile fibres on the basis of timber. From chemical pulp waste, alcohol is being produced at the rate of millions of gallons a year which in turn is being converted into a variety of chemicals for plastics and other purposes. Several thousand tons of fibre are being produced annually from wood, and an increasing proportion is also being spun into yarn in Norway.

Fishing and whaling, like forestry, are providing the raw material for industrial production. Norway's catch of herring now averages a million tons a year, and in the record year 1956 the greater part of the catch was processed to yield 247,000 tons of herring meal and 104,000 tons of herring oil. The meal is in demand at home and abroad as animal fodder. Herring oil, together with the oil brought back from the Antarctic by the whaling expeditions, forms the basis of Norway's important oil-refining and fat-hardening industry. The production of edible fat from marine oils was largely pioneered by Norway, and is important for the country's production and export of margarine. From herring oil a satisfactory substitute for olive oil has been developed for the canning industry. Of cod liver oil a variety of medicinal and industrial grades are produced for world export. The pharmaceutical industry has developed a considerable production of vitamin concentrates from marine oils, and marine oils are also being used in the soap, candle, and paint industries.

The canning industry is more than a century old in Norway, but major expansion dates from 1879 when the canning of



Shipyards are prefabricating whole sections.

brisling started in Stavanger, and later of sild and kippers too, Now some 300 factories account for an output of between 30,000 and 40,000 tons of canned fish yearly, and brisling and sild particularly are important exports. The Norwegian canning industry has done much to develop new machinery and equipment. It finances its own laboratories and training school.

A processing industry at present quite small is the production of meal and alginates from seaweed. Raw material resources along Norway's islanded and indented coast are immense and could be the basis for a production much larger than the present figure. Output of seaweed meal – used mostly as an additive fodder for animals – is now about 9,000 tons yearly. Alginates are used as thickening and stabilising agents for food, textiles, and paper.

With growing industrial production – from 1938 to 1959 output has more than doubled – manufacture of machinery and equipment has also developed considerably. For power plants there is a large output of generators and turbines. A Norwegian concern has made a speciality of developing Francis turbines for high heads of water with a very favourable efficiency rating. Of transformers, cable and wire, and other electrical gear there is also considerable production.

For the forest and timber-processing industries Norway has a large production of implements, including a power-driven chain saw which has won a large international market. For saw mills and planing mills, Norway has its own production of circular and frame saws and planing machines, and it also manufactures much of the plant for the pulp and paper mills. Here too there is some export.

Similarly in the fish and fish-processing industries Norway has a large production, and also export, of a great variety of items ranging from fish hooks to complete oil and meal plants.

For the merchant fleet there is a considerable construction — and repair — of ships in Norway, although the majority are still built abroad, in Sweden, Britain, Germany and other countries. In 1958 and 1959 the output of Norwegian yards was the biggest ever — merchant vessels totalling 255,000 and 221,000 gross tons, respectively (vessels above 100 gross tons only). Before the war, Norway's shipbuilding output never exceeded 50,000 tons a year. Tankers of over 30,000 tons deadweight are now being built in Norway, and orders have been placed for vessels up to 65,000 tons.

Although the biggest of the ships now being built are tankers, there is a varied output of other types of vessels. In the construction of smaller craft, Norwegian boatyards have ancient traditions, and there is a big output of fishing smacks, sailing boats, fjord «buses», ferries, sealing and whaling boats.

In connection with the shipbuilding and boatbuilding industries, a considerable manufacture has developed of large and small diesel engines and various deck machinery such as hydraulic winches of which there is also an appreciable export. Aluminium lifeboats are a new product which has won an international market. Echo-sounders, asdic, and radio-telephones are other marine items now being made in Norway.

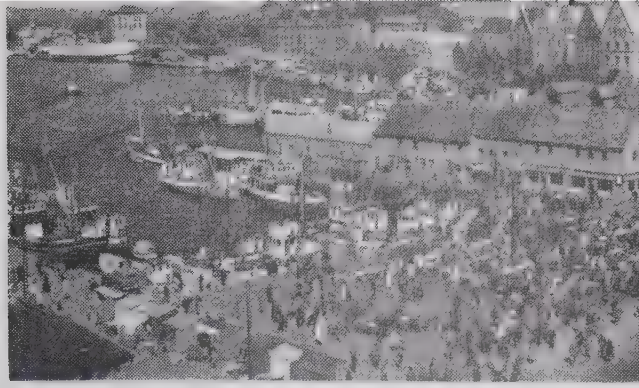
Of manufactured consumer goods there is now a large production of such items as refrigerators, washing machines, wireless sets, and tape recorders. Radios and recorders are being exported, and another new export of considerable size is that of adding machines and cash registers the manufacture of which has started since the war.

An entirely new kind of industrial export activity which has started since the war relates to overseas contracting of engineering work. A Norwegian engineering concern secured the contract for the construction of the first major stage of the big Australian Snowy Mountains hydro-electric power development scheme. Through NORENO — the Norwegian engineering export organisation — a number of power development contracts have been secured in Brazil.

V SHIPPING AND

Supertanker.

TRADE



Bergen, onetime Hanseatic League port.

The Norwegians are pre-eminently a shipping and trading nation. Their merchant fleet has long been the third largest in the world – surpassed in size only by the fleets of the United States and the United Kingdom – and their imports and exports are also, on a *per capita* basis, among the largest of any country in the world.

Geography has determined this emphasis on shipping and trade. To travel by water has been natural and necessary since the earliest times, and Norwegians have learnt to master the sea and the elements as few others.

A thousand years ago, Vikings were crossing the seas to distant lands, to Britain, Iceland, Greenland, even to the shores of North America. Later the Norse marauders became traders. In return for fish and timber they brought from abroad many of the ingredients of civilised living. Today Norway's exports are vastly more varied, and many goods that formerly had to be imported are now produced in Norway, but the country's foreign trade is greater than ever before. As a northern land, Norway cannot grow all the food it needs. As a land with a small population, it cannot economically manufacture all the articles it wants. Norway must of necessity have a large import trade and – to pay for this – a large export trade as well.

Among exports, shipping services rank as the most important. The merchant fleet, totalling 11,2 million tons gross on Jan. 1, 1961, far exceeds what is needed for carrying Norway's own overseas trade, large though this is. Most of the fleet, some 85 per cent, is engaged in traffic outside Norway, carrying freight between foreign ports for merchants the world over. It was in the middle of the 19th century, with the repeal of the Navigation Acts by Britain, that this development of Norwegian shipping as an international freight carrier was made possible. Up to then the system of national preference had prevailed. From then, the free trade principle was made paramount. Merchants in Britain, and subsequently in other countries as well, were now free to choose the ships to carry their goods according to the ordinary market criteria of competitive efficiency. On this basis, Norwegian shipping was able quickly — already in the 19th century — to jump to third place among the merchant fleets of the world. Already a hundred years ago, Norwegian sailing vessels were found in most of the major ports of the world, and the lead which Norwegian shipping established then has been maintained ever since.

In the course of this last century, technical developments have been rapid in shipping. The transition from sail to steam, from wood to iron, was difficult for Norwegian owners and builders, who had neither the technical nor economic resources of industrial Britain. Eventually, however, the transition was successfully accomplished. Subsequently, Norwegian owners have tended to be in the forefront of technical progress. They were quick to adopt diesel propulsion, and they were prompt in developing tonnage for new trades such as the carriage of oil in bulk, the refrigerator fruit trade, the heavy-lift trade, the Great Lakes trade. The large amount of tanker tonnage especially is typical of the Norwegian merchant fleet today. More than half the fleet now consists of tankers — about 6 million tons gross.

Probably more than any other economic activity, shipping is sensitive to international commercial fluctuations, and it is among the first to suffer when economic depression sets in. As an international freight carrying service, the Norwegian shipping industry has bitter experience of periods when ships have had to be laid up by their hundreds, when freight rates have touched rock bottom and scarcely covered the cost of bunkers. Certain measures have, however, been taken by the shipowners to guard against conditions such as these. Vessels operating on the «spot» market — the class of tonnage most affected by fluctuations in demand — are no longer such a preponderant part of the fleet. Much of Norway's tonnage, particularly tankers, is now employed on long term time charter — for up to 10 years at a time — instead of single voyages, and this helps to cushion against freight rate fluctuations. It is common now for ships to be fixed on time charter for a period of years even before they have been launched and delivered by the shipyards.

It is also a stabilising factor that more than 300 Norwegian vessels are cargo-liners engaged in regular traffic between ports the world over at rates that show relatively little variation.

It is important too that Norwegian shipowners have concentrated on maintaining as efficient a fleet as possible in order to be able to compete even on a falling market. Norwegian ships are on the whole fast and modern, with the majority of vessels under 10 years old and 46 per cent under 5 years old.

The some 1,200 Norwegian ships in foreign trade employ more than 50,000 seamen. Their rates of pay and conditions of work and leisure are established by union negotiation and parliamentary legislation and are on a par with the best in the world. On this score, Norwegian owners neither can nor wish to undercut their competitors.

Norwegian owners are more concerned about the high rate of taxation which they have to pay. Norwegian shipping has never been subsidised, nor does it wish to be, but the fear is sometimes expressed that heavy taxation may jeopardise the future of the industry in the face of international competition which is becoming increasingly severe. The enormous increase in the amount of tonnage nominally registered in Panama, Honduras, and Liberia, where shipping is hardly taxed at all, is a matter of great concern to Norwegian owners.

Also causing concern is the so-called flag discrimination practised by certain countries. The preferential treatment of national tonnage represents a radical departure from the free trade principles which have been dominant in international shipping during the last century. It is on the basis of those principles that the Norwegian merchant fleet on its present scale has been built up.

A large and flourishing merchant marine is vital to the Norwegian economy as a whole. The freight earnings of Norwegian ships are traditionally the means whereby the deficit in Norway's foreign trade is covered. Without the foreign earnings of the fleet, Norway's imports would have to be drastically cut and the standard of living of the whole nation would suffer.

During the second world war, half of Norway's tonnage was lost by enemy action while sailing for the Allies, and one of the primary tasks after the war was the reconstruction of the fleet. From 2.8 million gross tons in 1945, the fleet was quickly restored to its pre-war size of 4.8 million tons, and by 1959 it exceeded 10 million tons. This is a considerable increase, but it is no more than proportional to the over-all world increase in merchant tonnage, and Norway's share of world tonnage is no greater now than before the war.

The merchant fleet's role as the country's biggest earner of foreign currency has been restored, and its contribution in 1959 of some 3,000 million kroner net (after the deduction of operating charges abroad) almost bridged the gap between Norway's visible imports and exports. In 1959 this gap was 3,660 million kroner.

Although Norway's own shipbuilding industry has grown considerably, tonnage requirements are so large that the majority of ships are still built abroad. It is not surprising, therefore, that the biggest single item in Norway's imports consists of ships. Of total imports of 9,449 million kroner in 1959, ship imports amounted to 2,083. However, government regulations which require that shipowners raise credits abroad for financing the cost of tonnage built in foreign yards means that payment is spread over a number of years, thus easing the immediate pressure on Norway's balance of payments although increasing the cost to the owners.

Norway has ships built in a number of countries, with Sweden, Britain, and West Germany the principal suppliers. The export of ships by Norway consists almost entirely of old tonnage. This export yielded 206 million kroner in 1959.

Norway has traditionally much bigger imports than exports. Geographical conditions dictate a large import of such foodstuffs as grain, fruit, sugar, and coffee. There is also a large import of cotton and other fibre, yarn, and fabric for the textile industry, as well as of finished clothes. However, the biggest import items, apart from ships, are ores and metals, machinery and transport vehicles, and fuel, which together constitute almost half the total import bill.

Although Norway's range of production is increasing, particularly as the result of growing industrialisation, imports show a continually increasing trend in pace with the expanding economy and the rising standard of living. Norway does not aspire to self-sufficiency. Nor is it under any illusion that autarchy could be achieved except by a return to a relatively spartan way of life. As a shipping and trading nation, Norway is aware that specialisation and the international exchange of goods are the rational foundations of a high standard of material welfare.

Apart from shipping, Norway's most important so-called invisible export is tourism. Norway's income from tourists is estimated at some 300 million kroner a year. However, the expenditure of Norwegian tourists abroad is also large.

Norwegian commodity exports are many and varied but dominated by a few major categories. For centuries exports consisted almost entirely of fish and timber, and these, or derivatives of these, still rank among the country's principal exports. Of exports totalling 5,789 million kroner in 1959, fish and fish products accounted for 780 million kroner. Timber in the form of pulp and paper, earned 1,085 million kroner.

Until recently, forest products ranked first among Norway's exports, but now they have been ousted from premier place by ores and metals. In 1959 exports in this category amounted to 1,603 million kroner. This development reflects the growing industrialisation in recent years. In 1959 iron and steel were the biggest items in this category of exports, followed by aluminium.

Within the chemical sector, exports in 1959 amounted to about 550 million kroner. Marine oils and fats yielded about

303 million kroner, hides and furs some 130 million, and dairy products 88 million.

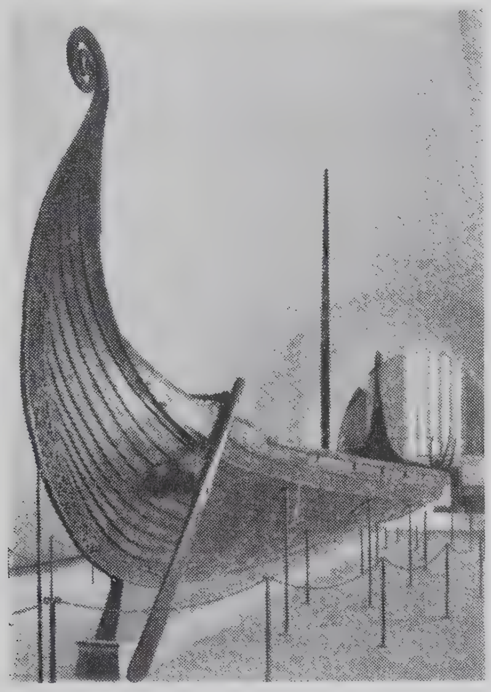
Both the volume and value of Norway's exports are increasing, and there is also a growing breadth and variety in the types of articles sold abroad. The many manufactured items now figuring in Norway's exports include office machines, cranes and pulleys, machinery for fish and pulp plants, refrigeration plant, transformers, wireless sets and tape recorders, bicycles, boats, and furniture. Norway, which traditionally is a textiles and clothes importing country, has even begun a small but growing export of wool and knitted goods and of certain yarns and fabrics.

Helping to promote exports is the Export Council of Norway set up by Parliament after the war and financed by the exporters themselves. The Council maintains representatives in a number of important overseas markets.

Norway's foreign trade is widely dispersed, and there is probably not a country in the entire world with which it does not have commercial relations. Of particularly great importance, however, is the trade with the United Kingdom, representing in 1959 about a sixth of the value of Norway's total imports and exports. Including ships, however, figures show a considerable increase in our imports from West Germany and Sweden, in 1959 representing the first and second in value, respectively. West Germany and Sweden are also the second and third biggest markets for Norway's exports. Outside Europe, the biggest trading partner by far is the United States of America. In the case of all these countries, Norway's imports far exceed its exports.

The reconstruction of Norway after the war and the subsequent heavy investment in the further development of the country's economy have necessarily meant exceptionally large imports of raw materials and capital goods. In order to afford this large outlay of foreign currency, it has been necessary to ration rather severely the import of other less essential goods. Recently, however, there has been a considerable relaxation of imports controls, and nearly 85 per cent of imports are now free-listed. In principle, and as far as possible in practice, Norway adheres to free trade and supports the efforts of international organisations which aim at removing commercial barriers.

Norway has engaged actively in discussions and investigations relating to the establishment of a common market in Scandinavia. Norwegian exporters have expressed themselves as more interested, however, in a wider European free trade area, and the general expectation is that if such an area, including Britain, is established, Norway would also join.



Viking ship preserved in Oslo.

VI TOURISM AND

North Cape.

TRANSPORT

Ferries are vital links in the communications chain.

Norway, a country of about 3.6 million inhabitants, receives every year between 1 and 2 million visitors from abroad, the great majority holidaymakers. Whilst tourism does not loom as large as an industry as it does in, say, Switzerland, it does yieald a considerable income in foreign currency, estimated at several hundred million kroner a year. The Norwegians themselves are great travellers, however, and in fact their expenditure abroad generally exceeds the income from foreign tourists in Norway.

However, the value of tourism cannot be computed in strictly economic terms. It is a form of international relations which can do much to create friendship and remove prejudice.

Few countries attract more visitors yearly than Norway. The great majority are Swedes and Danes, but most other nationalities are also represented, particularly British and American. The British can claim to be the first to have discovered Norway as a holiday country, about a century ago. Titled and wealthy Englishmen would spend whole summers fishing salmon and trout in remote Norwegian valleys. Some still do, but foreign travel has become more democratic in recent years, and the largest category today are visitors of modest income who find that their money stretches farther in Norway than in most other countries.

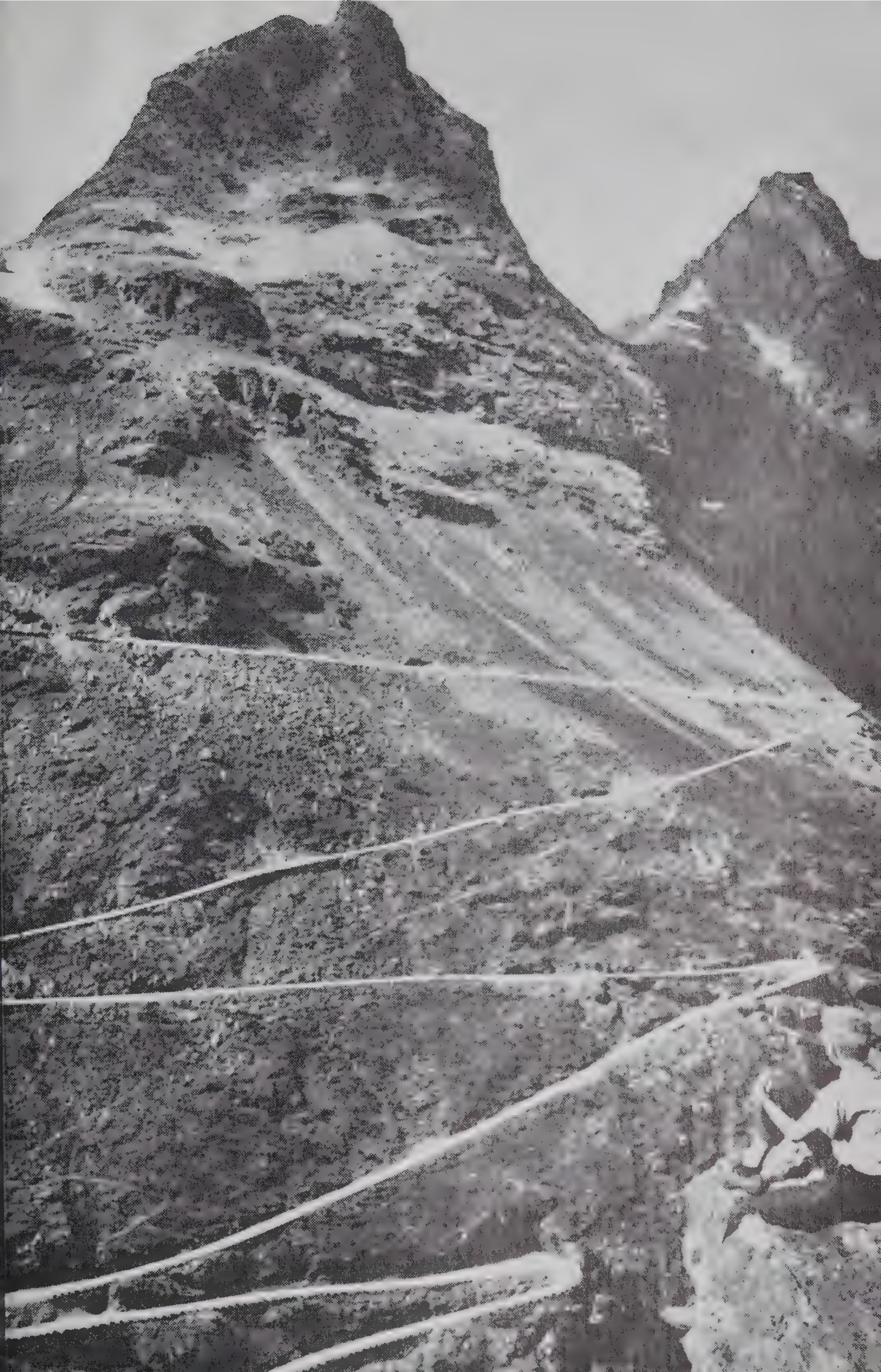
Many are campers who manage on surprisingly little money. For these there are good camping sites in Norway. Many are hikers and cyclists who find cheap and good accommodation at Norway's youth hostels and mountain cabins. Many visitors too come on agency-arranged tours, and the reasonable rates charged by Norwegian hotels make the inclusive cost remarkably low.

The standard of comfort, cleanliness, and food at Norwegian hotels is high, and their excellence is guaranteed by strict Government regulations to which they must adhere. According to these regulations, the hotels are graded, with tourist and mountain hotels ranking as the top class. Tourist and mountain hotels, and approved town and country hotels, number altogether about 450 with nearly 25,000 beds. All are establishments which have been specifically permitted to use the name hotel after achieving the standard of equipment and so on laid down by Government regulations.

In addition to hotels are boarding houses, youth hostels, touring cabins, and mountain lodges, and these bring the total number of beds to more than 70,000. In cities such as Oslo where there is still a shortage of hotels in the season, despite the many new hotels built in the last few years, there is an excellent system for finding visitors accommodation of an inspected and approved type in private homes.

Tourists are attracted to many parts of Norway, but probably the most popular region is the west which, with its mountains and fjords, offers some of the most magnificent scenery to be found anywhere in the world. Bergen, Norway's second city, is the centre of this region, and has excellent shipping services with Britain and the United States, as has also Stavanger further to the south. From both these cities, the famous fjord country is easily accessible, and here are found many of Norway's largest and most frequented tourist hotels.

International cruising liners are annual visitors to the fjords, and in addition, many tourists embark in Bergen on coastal liners and voyage up the length of Norway beyond the Arctic Circle to the far north. The voyage itself, through fjords and among islands, is memorable, and culminates at North Cape, Europe's northernmost outpost, where the sun never sets in summer. Norway is the land of the midnight sun, but whilst the night is brief everywhere, it is in the north of Norway that the sun shines longest. Not only by ship, but by road and rail as well, many tourists visit North Norway annually. There



Roads must zigzag up steep mountainsides.

the Lapps, the last nomads, still wander with their reindeer across the Arctic tundra in search of pasture.

South Norway has not the dramatic, often startling, scenery of West and North Norway, but for many visitors it is a favourite holiday centre. Everywhere in summer the weather in Norway tends to be warm, due to the beneficent influence of the Gulf Stream, but it is particularly so in the south, on Norway's «Riviera», and bathing, boating, and fishing can be indulged in there in climatic conditions that are almost Mediterranean. The south coast has many small comfortable resorts, cosy little towns of white-painted wooden houses, still redolent with the tar and pitch of sailing ship days. It is one of the favourite destinations of Norway's own holidaymakers.

Norway has many man-made attractions for visitors. Although nature is undoubtedly Norway's biggest draw as a holiday country, very full sightseeing schedules can be offered visitors in Oslo, Bergen, and other towns. In Oslo, the Vigeland park sculptures, the murals in the new Town Hall, the peasant art and architecture at the open-air museum at Bygdøy, the Viking ship museum, the Fram polar ship, the Kon Tiki raft, and Akershus fortress are popular attractions. In Bergen the Hanseatic quay and in Trondheim the mediaeval Gothic cathedral are renowned.

It is in summer that the majority of tourists visit Norway, but Norway is also the birthplace of skiing, and its mountain resorts are the destination of many winter sports enthusiasts. There are slopes suitable for both beginners and experts, and the snow conditions are good. There is scope here for considerable expansion of traffic, and this branch of tourism is therefore being vigorously developed at present.

Tourism in Norway, both summer and winter, is directly linked with the travel and transport facilities available. By land, sea, and air, communications between Norway and the outside world are excellent. Good roads, bridges, and railways link Norway with Sweden. From Denmark and Britain there are frequent liner services operated by fast, modern passenger vessels. From the United States, the Norwegian-America Line operates a regular service with its two large post-war trans-

Norway - eldorado for skiers.

atlantic passenger ships «Bergensfjord» and «Oslofjord», and the older «Stavangerfjord». Scandinavian Airlines System (SAS) and foreign airlines such as BEA, KLM, and PAA operate aircraft on Norway where there are airports for international traffic at Oslo, Bergen, Stavanger, and Kristiansand.

Inland, despite the immense natural obstacles imposed by mountains and fjords, and the equally important economic obstacles imposed by a small and scattered population, a good transport network has been developed.

About their roads, Norwegians tend to have an inferiority complex, and compared with the autobahns in some countries, the roads in Norway are no doubt less smooth and wide and straight. From a tourist point of veiw this is often an attraction. Norwegian roads that cross mountains and hug the steep sides of the fjords offer scenes of outstanding beauty and grandeur. Not surprisingly, the number of motoring visitors to Norway has gone up spectacularly in recent years.

As the amount of motor traffic grows, the road network is

Sandy South Coast beach.

being unremittingly extended and improved, within the framework of available funds. By 1960, public roads amounted to 32,000 miles. Behind this considerable mileage lies immense effort, particularly in rock blasting, tunneling, and levelling. Integral in Norway's road construction is the provision of an exceptionally large number of bridges owing to the great many rivers, fjords and islands. Bridge-building is very much a Norwegian engineering speciality.

Norway's railways, like its roads, have had to be built in the face of exceptionally severe geographical obstacles. Like the roads, the railways offer the traveller remarkable scenic spectacles. The Bergen to Oslo railway across the mountains is renowned the world over for its wonderful views and also for its remarkable engineering. Along its course are no fewer than 178 tunnels altogether 23 miles long. The other major line is from Oslo north to Trondheim and beyond to some miles past the Arctic Circle. The present plan is to extend the North Norway railway as far as Bodø by 1962. Important too is the South Norway railway linking Oslo with Stavanger via south coast towns.

The Norwegian railways suffer from the problem of high construction costs and low income due to small population. In relatively densely populated areas such as Østfold and Vestfold in South-East Norway a profit can be made, but this is more than absorbed by the losses on other important but less lucrative lines. The Norwegian State Railways are making great efforts to reduce running costs by switching from steam locomotion to electric traction wherever electrification is feasible, and to diesel traction on all other lines. This «away from steam» programme is now well advanced, and although the capital cost is heavy, the ultimate operational savings will be considerable.

The Norwegian railways are noted for their efficiency and reliability, and particularly for the very fine spirit of service which pervades the staff, and which has given Norwegian railwaymen a highly enviable reputation both among visitors and their own countrymen.

By the end of 1960 the length of railway line in Norway was about 2,700 miles, of which 1,100, carrying about two thirds of the total traffic, were electrified.

Civil aviation in Norway has made great strides in recent years. The number of airfields has been increased considerably and the existing ones enlarged and improved, often in conjunction with the military authorities. Thus the new Flesland airfield near Bergen, for instance, has been built with military appropriations and serves a dual purpose — civil transportation and military preparedness. Flesland and the Sola airport, Stavanger, and, of course, Fornebu airport, Oslo, are the principal civil landing grounds in Norway, but there are a number of smaller ones too, and the result has been a very marked rise in air traffic, internal as well as external. Seve-

Norway, broken by fjords and rivers, has an extraordinary number of bridges.

ral companies have concessions for operating air passenger services, and fares are kept low and often compare favourably with fares for other forms of transport.

A key place in Norwegian civil aviation is held by Scandinavian Airlines System (S.A.S.), a consortium of the national airlines of Norway, Denmark, and Sweden. Through S.A.S., Norway plays a role of some importance in international aviation, for S.A.S. is one of the world's biggest airlines with routes all over the world. It has pioneered the trans-polar routes to Los Angeles in the west and Tokyo in the east. S.A.S. is an interesting and important example of international cooperation in a field which technically, commercially, and in other respects is perhaps one of the most difficult to operate.

In spite of good road, rail, and air services, it still remains true, as it has done since Norway first was populated, that a principal artery of transport and communication is the water – the fjords and channels around the coast. The fjord buses, the ferries which link the islands and cross the fjords, and not least the coastal steamers which, summer and winter, operate along the great length of the country, are still vital in Norway's overall transport network. For the coastal population it is still most natural, and quite often quickest, to travel by boat between north and south. The coastal steamers maintain excellent services, and even tourists find that pleasant days, or even weeks, can be spent sailing up the Norwegian coast in the sheltered channels between the islands. The scenery, and the many little ports of call on the way, make an unforgettable impression of beauty and charm.

Norway's coastal express service operates daily sailings made possible by a pooling of ships by a number of companies. Schedules are coordinated with a complex network of subsidiary services covering smaller places along the coast. Several hundred ships althogether constitute Norway's fine fleet of coastal carriers operating a service – for freight as for passengers – which compares favourably with anything of its kind in the world.

In view of the importance of shipping for both internal and external transport, Norway is fortunate in possessing a great many excellent natural harbours, many of them deep enough to take ships of the biggest size. In Oslo, Bergen, and other ports, excellent docking and loading facilities are available.

Important is the fact that nearly all Norway's harbours are ice-free all the year round, unlike the ports in, for instance, the Baltic. This has already resulted in Narvik becoming one of the world's major ore shipping ports. Millions of tons of Swedish iron ore are carried there annually by rail for dispatch to countries all over the world. Now other Norwegian ports such as Trondheim are also tending to be used more as transit ports for Swedish traffic.

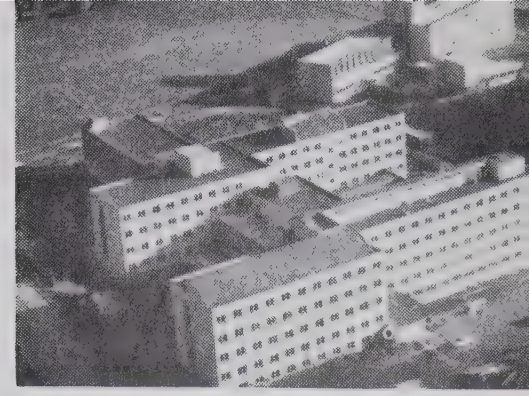
Souvenirs of good design are found by the tourist in Norway.

VII GENERAL

Economic conditions in Norway have generally been good since the war. There has been a remarkably long and unbroken period of full employment and economic expansion, with a steadily rising curve of production and trade. The rate of investment has been one of the highest, if not the highest, in the world, and at the same time it has been possible to raise the standard of consumption from year to year. Prices have gone up, and therefore also the cost of living, but earnings have gone up even more, so that there has been a net gain in real income.

To what extent these agreeable results are the outcome of economic policies specifically conducted by Norway, and to what extent they merely reflect general world trends and conditions, is an arguable point. It is certain, however, that for a country like Norway, with one of the biggest *per capita* foreign trade accounts in the world, and with a merchant fleet which is largely dependent on the international carrying trade, the state of the world demand for goods and services is a vital factor in determining the country's internal economic climate.

Norway's economic problems since the war have been of an entirely different order from those which obtained during much of the pre-war period. The problems have been more those of an expansive rather than a contractive economy. There has not been much call for the economic policies which were formulated in the 1930's for stimulating economic activity and purchasing power. Rather the emphasis has been on restraint. The guiding line has been to try to make the nation-



New research centre in Oslo.

ally most advantageous use of the limited available resources without starting a steep inflationary spiral.

Immediately after the war, effort was concentrated on reconstruction, which was accomplished with remarkable speed. Next, effort was directed at increasing the productive capacity of the nation. This too was achieved with relative ease. Norway, like much of the rest of the world, was seized by a compulsive movement of economic expansion.

For a number of years now, gross investments have been at the rate of about a third of gross national production. The consequent production increase has ranged between 3.5 and 4.5 per cent a year, and in this connection it may be noted that a production increase of just 3 per cent a year means a doubling of total output in less than 25 years.

The labour force has increased considerably since the war, but in the last few years the production increase can be attributed principally to higher individual productivity. Recently the rise in productivity has been about 3 per cent annually. Research and training, rationalisation and mechanisation, and the switch of labour from low-yield to high-yield occupations, are among the factors accounting for this productivity increase.

In the first years after the war the Government endeavoured to exercise control of economic developments largely by means of quantitative controls, for instance by a strict system of rationing and price control, by control and limitation of imports and currency expenditure generally, by the subsidy of basic foods and the encouragement of wage restraint, by building licences and so on.

On the whole, there has been a clear trend recently in the direction of replacing many of these direct physical controls with indirect controls of a chiefly financial kind. Most important has been the attempt to restrain excessive economic activity by raising the bank rate (after standing at 2.5 per cent from 1945 it was raised to 3.5 per cent in 1955) and by restricting credit generally. However, there has been no attempt to resort entirely to monetary controls, which, after all, tend to be rather undiscriminating and whose effectiveness cannot always be relied on in the teeth of a rising tide of economic boom.

The policy of deliberately determining the cost of living has been pursued steadily, and with considerable, if not complete, success. From 1938 to 1953 the yearly average rise in prices was 5.1 per cent and from 1953 to 1959 3,5 per cent, compared with 10.3 and 3.3 per cent in Britain in the same two periods. One of the most important means of directly influencing the cost of living has been the extensive system of subsidies for keeping down the price of important foodstuffs. Undoubtedly this has helped to influence wage negotiations and keep down the scale of demands.

The authorities have also consistently tried to pursue an over-all national economic plan, formulated in the annual National Budget. It would be misleading to call the National Budget an economic programme. It is rather a forecast of likely developments in various sectors of the national economy. In addition, howewer, the Government has now instituted 4-year programmes (the present one runs from 1958 to 1961) setting out targets in the economic and social fields.

Important are the steps which non-governmental organisations can take in support of such targets. Especially significant is the attitude of the organisations of workers and employers, of farmers and fishermen and other primary producers, of banks and other financial and commercial institutions, and of Norway's powerful local (municipal) authorities.

Labour is strongly organised with a membership exceeding half a million in unions affiliated to the Federation of Trade Unions. In the post-war situation of full employment, with labour a scarce commodity, the unions' position has been particularly powerful. But this power has been exercised with restraint in response to considerations of over-all national interest, and in return, of course, for measures designed to limit the rise in the level of retail prices as much as possible.

Although wage rates have increased and have more than kept pace with rising living costs – the cost of living has gone up by 63 per cent from 1949 to 1959, wages have increased by 104 per cent, and real earnings by 25 per cent – concessions secured by workers have been largely in terms of social improvements – so-called fringe benefits – such as the institution after the war of 3 weeks' paid holiday a year for all wage-earners. Such innovations as children's allowances and gradually widening social services and benefits generally have also helped to raise income outside the narrow ambit of hourly wage rates. Cheap electricity, cheap housing loans, dictated by social considerations, are also factors that should be taken into account in measuring the standard of living.

That this standard is rising is indicated by the changing composition of consumption. In 1910, 42 per cent of consumption was food, in 1959 30 per cent. Over the same period the proportion of consumption devoted to housing, light and fuel has gone down from 14 to 11 per cent. On the other hand, the share of domestic equipment and help, clothing, medical attention, personal hygiene, and travel has gone up from 25 to 38 per cent of total consumption. The recent increase in sale of domestic gadgets has been particularly notable. In 1952 5,000 refrigerators were marketed, in 1959 54,000. For tape recorders the figures are 4,000 in 1952, 16,000 in 1959. Motor cars are the item where consumption in Norway lags behind that in other advanced countries. In 1956 only 2.4 per cent of private consumption was accounted for by the purchase and running of motor vehicles compared with 6.3 per cent in Sweden and some 10 per cent in the United States. Motor vehicle imports have been restricted owing to currency considerations, but even here the position is now greatly improved with imports a record in 1959 at 35,000 – 290 per cent more than in 1938.

Restrictions on imports of motor cars were finally removed in 1960.

The combination of expansion and stability which marks the economic scene in Norway can be attributed in part to the responsible role which both workers' and employers' organisations play in the affairs of the nation. Labour relations have been worked out between the two sides in industry which greatly reduce the risk of a work stoppage. Between the two sides, detailed agreements are in force which lay down the forms of procedure in industrial disputes and negotiations. These agreements are backed by various legislative provisions concerning working conditions and mediation and arbitration machinery. The Labour Court is an important forum for interpreting agreements and clearing up misunderstandings. Unless the proper procedure as laid down by law is followed, both strike and lock-out can be heavily punished by court judgment. On the other hand, there is no restriction on either strike or lock-out if the prescribed procedure is followed.

Important too, in determining economic stability in Norway, are the strong organisations of primary producers, particularly farmers and fishermen. The fixing of agricultural prices especially can affect significantly the general level of prices and thus react on wages. Here too it can be said that on the whole a responsible restraint has been practised which, whilst not impinging on the legitimate rights and interests of the producers, has helped to maintain a generally stable economic situation.

Especially in the present circumstances of considerable reliance on general monetary controls, the attitude of the banks and other financial institutions is of great importance. There are a great many banks in Norway, both private business and savings banks and State banks, but at the apex is the Bank of Norway, which was nationalised after the war and which through the bank discount rate and other means, can exercise a considerable influence on the economic climate as a whole.

The banks have, in response to official appeals, pursued a policy of restraint in recent years with regard to lending, and have generally cooperated in the national policy of trying to keep investments and over-all economic activity and expenditure within reasonable bounds in relation to the country's commitments and resources as a whole. The insurance companies too, with very large sums available for investment, are playing a responsible role and have agreed to place a good deal of their funds in Government bonds.

The local (municipal) authorities, which enjoy a high degree of autonomy in Norway, have also cooperated in curbing their expenditure in spite of the many calls for development in their various districts.

It is, however, State expenditure and taxation policy which perhaps most significantly determines the internal economic situation. State budget expenditure has been high since the war and has gone up year by year. This applies to both current and capital expenditure. In the current account, outgoings on defence, subsidies, and social services have been particularly heavy. In the capital account, large sums have been expended on industrial development, such as the construction of a steel plant in North Norway.

Nevertheless, in spite of the exceptional scale of State expenditure since the war, it has been financed very largely by current income rather than by loans. Taxation, both direct and indirect, is heavy in Norway, and never as heavy as in the last few years, and a good deal of purchasing power has been absorbed in this way. Insofar as this is invested in capital schemes, tax revenue may perhaps be considered a form of compulsory saving by the public.

Additionally, the Government is by various savings schemes, including premium bonds, encouraging voluntary savings, and there has been a notable increase in such savings since interest rates went up.

Some of the moneys received are applied to the State banks of which there are several in Norway, each with its specific function. The State Housing Bank, for instance, finances house purchase by lending money to home-makers at a low rate of interest for repayment over a very long term of years.

The Labour Party has been in power in Norway since 1935, but nationalisation has not been an important plank in its programme. When the government have introduced public ownership, they have done this by starting new enterprises rather than taking over old ones. The Norwegian economy is in fact a mixed one, with private and public enterprise and ownership both strongly represented. Certain essential services, or services which owing to natural conditions run at a loss – the railways for instance – have been State-owned since the start. On the other hand, electricity supply is in various hands. Some plants are built and owned by the local authorities, some by industri, and some by the State. Where special social considerations apply, as for instance with regard to the trade in spirits and wine, the State has established its own monopoly. The football pool and the monthly national lottery are both State-run.

In the industrial sphere, State-owned plants may operate side by side with private plants, as in mining, aluminium, and steel production. In other cases, the State may own some, but not all, the shares in a particular company. A notable example is the State ownership of 48 per cent of the shares in one of Norway's biggest industrial concerns, the chemical producers Norsk Hydro. On the other hand, Norway's biggest timber-processing company, Borregaard, has its capital subscribed by several thousand small shareholders.

In retail and wholesale distribution, too, the same mixture of systems applies. There are a great many commercial wholesalers and private retailers, but in addition there is the very strong cooperative consumers' movement with a large share of the total wholesale and retail trade. Producers' cooperation in the field of purchasing and marketing, by fishermen and farmers particularly, is also widespread.

Individualism and cooperation in various forms can be said to be the two main – apparently opposite but actually supplementary – constituents of the Norwegian economy and society generally. It is in the combination of individualism and cooperation in nearly every important field of economic and social endeavour that much of the explanation can be found of the relatively good conditions which obtain in Norway today.

Nevertheless, the efficacy of purely internal arrangements in determining economic conditions should not be exaggerated. Particularly for Norway, with its large foreign trade and shipping interests, international economic conditions and developments have a decisive say. The foreign trade and payments position is for Norway a matter of vital concern. For a number of years Norway has had not only a large foreign trade deficit but also a deficit in over-all payments which to a considerable extent has had to be met by foreign loans. In view of the fact that Norway's industrial development is relatively new and that there are still considerable resources, particularly water power, awaiting exploitation, the foreign payments deficits and borrowings in recent years are considered defensible, even desirable.

In the long run, of course, an over-all balance of foreign payments must be established. With the rapid growth of Norwegian production capacity, particularly in the industrial sphere, and the expansion of the Norwegian merchant fleet, Norway is in fact establishing such a parity. To maintain a high standard of living Norway must import much from the rest of the world, but Norway also has much to offer the world in exchange, both of goods and services. It is in the expectation of a continued healthy demand abroad for its goods and services that Norway is building its economic future.

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